

- Fig. 3. Dorsal view of the collar-region of *Chone princei*, sp. n. Gulf of St. Lawrence, Canada. Enlarged under a lens.
- Fig. 4. Ventral aspect of the foregoing. Similarly magnified.
- Figs. 5, 6. Anterior hooks. \times oc. 4, obj. D, with full draw-tube.
- Fig. 7. Posterior hook. \times 800 diam.
- Fig. 8. Spatulate bristle of the anterior region. \times oc. 4, obj. D.
- Fig. 9. Posterior hook of a *Chone* (p. 63) from the Arctic Expedition of 1875-76. \times about 800 diam.
- Fig. 10. Anterior hook of *Branchiomma kollikeri*, Claparède, or var. *B. vesiculosum*, 'Porcupine' Expedition, 1870. \times oc. 4, obj. D.
- Fig. 11. Posterior hook of the same. Ditto.
- Fig. 12. Dorsal view of the collar-region of *Sabella nordenskiöldi*, sp. n. Enlarged under a lens.
- Fig. 13. Ventral view of the same. Similarly magnified.
- Fig. 14. Linear lanceolate process at the tip of a branchial filament. \times 60 diam.
- Fig. 15. Posterior hook of the foregoing. \times 700 diam.

PLATE IV.

- Fig. 1. Longer dorsal bristle of *Sabella hystricis*, sp. n., from the 'Porcupine' Expedition of 1870. \times oc. 4, obj. D, with 1-in. draw-tube.
- Fig. 2. Shorter form with more distinct wings. Ditto.
- Fig. 3. Anterior hook. \times oc. 4, obj. D, with 2-in. draw-tube.
- Fig. 4. Longer dorsal bristle of *Sabella nordenskiöldi*, sp. n., from Finmark. \times oc. 4, obj. D, with 1-in. draw-tube.
- Fig. 5. Shorter bristle with broad wings. Ditto.
- Fig. 6. Anterior hook. Ditto.
- Fig. 7. Branchial eyes of *Branchiomma kollikeri*, Claparède, or var. of *B. vesiculosum*. \times oc. 2, obj. A.
- Fig. 8. Long dorsal bristle (anterior) of *Chone reayi*, sp. n. \times oc. 2, obj. D, with draw-tube.
- Fig. 9. Intermediate bristle with wide wings. \times oc. 4, obj. D.
- Fig. 10. Paddle-like form with filament at the tip. \times oc. 4, obj. D, with draw-tube.
- Fig. 11. Anterior hook. \times 450 diam.
- Fig. 12. Dorsal view of the collar and pedicle of the branchiæ. Enlarged under a lens.
- Fig. 13. Ventral view of the foregoing.
- Fig. 14. Winged bristle of *Chone princei*. \times oc. 4, obj. D.

II.—*New Lepidoptera from Dutch New Guinea.* By J. J. JOICEY, F.L.S., F.Z.S., F.E.S., and G. TALBOT, F.E.S.

[Plates V.-VIII.]

THE forty-four species herein described were obtained by Messrs. A., C., and F. Pratt in November 1914 during their expedition to the district of Geelvink Bay, North Dutch New Guinea.

The species from the Coast District, Geelvink Bay, were

collected in Wandammen Bay, and a short distance inland from here are the Wandammen Mountains, where the majority were taken.

Our thanks are due to Lord Rothschild, Dr. K. Jordan, and to Mr. G. T. Bethune-Baker for help given and the opportunity afforded of comparing specimens.

In the following descriptions some species referred to as described by Joicey & Noakes and Joicey & Talbot will shortly be published in the Trans. Ent. Soc. Lond.

RHOPALOCERA.

Papilionidæ.

1. *Papilio (Troides) chimæra dracæna*, subsp. n.
(Pl. V. fig. 1.)

♀. *Fore wing* with cell-patch large, subapical spots large and closer together than in typical form, submarginal spots small. *Hind wing* with a large spot in end of cell; distal edge of band not so strongly scalloped, so that the black margin is broader on the whole. Below, the base of costa is yellow.

Abdomen with shorter hair and reduced black on the segments, these being much more yellow basally than in the typical form.

Three examples, Wandammen Mtns., 3000-4000 feet, Nov. A specimen, supposed to be the ♂, was nearly taken by a native collector, who stated that the hind wing was without black spots.

This race appears intermediate between the typical form and a ♀ from Central Dutch New Guinea, described as *charybdis* by R. Van Eecke in 'Rhopalocera of the Third Dutch Expedition to New Guinea,' p. 56, pl. ii. fig. 1, March 1915.

Pieridæ.

2. *Delias maricæ*, sp. n.
(Pl. VI. fig. 1, ♂, 2, ♀.)

This distinct species is apparently most nearly allied to *clathrata*, R. & J.

♂. *Upperside*.—*Fore wing* with broad apical and outer black margin; costa black to base, extending into the cell and connected with a black discocellular spot; basal two-thirds of wing thinly scaled with white over black and forming a transitional stage to the completely black wing of *elongatus*,

Kenr.; two white apical dots. *Hind wing* white, with a narrow black border from vein 7 to inner angle, widest above vein 3.

Underside.—*Fore wing* black, with a broad white median band, extending along inner margin from base to near tornus, slightly invading cell between veins 2 and 4, its outer edge, placed at right angles to costa, slightly dentate, curved from veins 4-6, the inner edge between these veins not touching cell, and thus forming a narrow anterior part; three orange-yellow apical spots, below which are three vertical marginal streaks in 2-4. *Hind wing* with black ground-colour; base behind præcostal, base of cell, and inner margin nearly to vein 2 powdered with dark orange; a curved pale yellow spot below origin of vein 2; a somewhat oval-shaped pale yellow discal patch, its lower edge evenly convex, its upper irregular, lying mostly within the cell and extending a little beyond the discocellulars, which are white; a broad creamy submarginal band from costa above vein 7 to 1*b*, widest in 2 and 3, where the inner edge projects more inwardly, outer edge dentate between the veins and leaving a narrow black margin.

♀. *Upperside*.—*Fore wing* with extended black, leaving a grey-white median patch as below, but only extending above vein 3 as a small yellowish spot at base of 3, and as a narrow curved yellowish streak from 4 to 6; a narrow yellowish suffusion bordering lower edge of cell between 2 and 4; three yellowish apical dots, one in 6 the larger. *Hind wing* with a broader marginal border than in ♂.

Underside of fore wing as in ♂. *Hind wing* with discal patch somewhat reduced and spot below vein 2 minute.

Length of fore wing, ♂ 28, ♀ 30 mm.

2 ♂♂, 2 ♀♀, 6000 feet, Wandammen Mtns., Nov.

3. *Delias tesssei*, sp. n.

(Pl. VI. fig. 3, ♂, 4, ♀.)

Nearest to *hapalina*, Jord., more especially in the ♂. Whilst the ♀ of *hapalina* resembles the ♂, the ♀ of the present species is much more divergent.

♂. *Upperside* of fore wing with outer black area a little more extended than in *hapalina*, its inner edge not indented in cellule 4.

Underside.—*Fore wing* with more extended apical black and reduced costal streak; yellow apical spots larger. *Hind wing* without yellow on the disc or with only a slight trace; basal streak yellow at base and white outwardly; subbasal

black bar narrower; inner black margin extended to vein 2 and forming a short marginal border to middle of cellule 3; black discal line widened posteriorly from cellule 4, being widest where it joins the inner marginal black; the red distal border is not curved below vein 2, but invades the black to 1*b*; inner margin washed with yellow near the base only.

♀. *Upperside*.—*Fore wing* with much more extended black. *Hind wing* with a broad black outer margin.

Underside.—*Fore wing* with black outer area as above; basal three-quarters of cell washed with pale yellow. *Hind wing* with whole inner and outer margin black, leaving red line better defined than in ♂ and narrowly bordered with white distally.

Length of fore wing, ♂ 30, ♀ 27 mm.

A series of both sexes, 6000 feet, Wandammen Mtns., Nov.

4. *Delias caroli wandammenensæ*, subsp. n.

(Pl. V. fig. 2.)

♂. *Upperside* of fore wing with black area extended to origin of vein 2 and to inner margin before tornus. *Hind wing* with broader margin, especially at apex.

Underside of fore wing with mostly only three apical dots. *Hind wing* with the red submarginal line more broken at the veins, forming separate bars in some specimens.

♀ with black area on both wings more extended; white area tinged with pale yellow distally; apical spots as in *caroli*. *Underside* as in typical form, apical spots smaller.

A series of ♂ ♂ and 3 ♀ ♀, 6000 feet, Wandammen Mtns., Nov.

5. *Delias thompsoni*, sp. n.

(Pl. V. fig. 3, ♂, 4, ♀.)

The pattern of the hind wing of this species is unlike any known form of the genus.

♂. *Upperside*.—*Fore wing* with basal half white to end of cell and to before the tornus, outer edge indented below vein 8; outer half black and costa black to base. *Hind wing* white, with a narrow black margin, which widens at vein 6.

Underside.—*Fore wing* black; inner margin, from base to before tornus, white to submedian fold. Apex with two brick-red spots, and three dots of same colour in 3-5. *Hind wing* black; a yellow spot at base of costa; an elongate brick-red subcostal spot in 6, and below it in middle of cell

a small round spot of similar colour; a brick-red costal spot before the apex and joined to the first of a submarginal row of white spots, the first two being farther apart from the others, which are more or less connected to form a line to the anal angle; traces of white scaling in cellule 7 along vein 6.

♀. *Upperside* with more extended black on both wings, the hind-wing margin being widest between vein 4 and costa; basal white of fore wing and inner margin of hind wing with a slight yellowish tinge. Apex of fore wing with two brick-red spots.

Underside of fore wing with reduced white at inner margin and larger apical spots continued as faint streak to the tornus. Hind wing as in ♂, but with submarginal spots tinged here and there with red.

Length of fore wing, ♂ ♀, 25 mm.

A small series of both sexes, 6000 feet, Wandammen Mtns., Nov.

6. *Elodina definita*, sp. n.

Differs from all other New Guinea species of this genus in the reduced costal and basal black on fore wing above, this only slightly invading cell at extreme base. The black marginal border is regularly incurved and only slightly waved; it terminates below vein 2 and is rounded at this vein.

Underside of fore wing at base lemon-yellow in cell, costa narrowly margined, a well-marked subapical black band terminating below vein 2. Hind wing lemon-yellow at base in cellule 8. Ground-colour chalky white on both sides.

Length of fore wing 22 mm.

1 ♂, Wandammen Mtns., 3000-4000 feet, Nov.

DANAINÆ.

7. *Danaida melusine commixta*, subsp. n.

This form, of which we only possess a damaged ♀ specimen, partakes of the characters of *groesmithi*, Joicey & Noakes, whilst connecting this with the race *atakwensis*, Joicey & Noakes.

♀. *Fore wing* with apical spots and median patches larger than in *groesmithi*, but smaller than in *atakwensis*. The upper median patch is as long as in the more typical *melusine* forms, but does not touch the cell; submarginal spots large, as in *groesmithi*.

Hind wing with three apical spots smaller than in *grose-*

smithi; discal patch well defined, no spot at base of 6. Underside with large submarginal spots, only four of which can be seen owing to the damage sustained by the specimen; a spot at base of 8.

Ground-colour of underside as in typical forms, not pale as in *groesmithi*.

1 ♀, 3000–4000 feet, Wandammen Mtns., Nov.

8. *Ideopsis vitrea serena*, subsp. n.

♀. Nearest *arfakensis*, Fruh., but distinguished by more sharply defined markings.

Fore wing with the vitreous postmedian area sharply defined distally and quite clear in areas 2 and 3. *Hind wing* with a larger black apical patch; greenish-yellow ground-colour quite clear and without any dark lines in the cell.

4 ♀ ♀, 3000–4000 feet, Wandammen Mtns., Nov.

Nymphalidæ.

9. *Cynthia arsinœ rebeli*, Fruh., aberration.

(Pl. VII. figs. 1, 2.)

This is a melanic aberration affecting three wings on both sides, whilst the left hind wing remains normal. The black markings are condensed to form patches. On the fore wing is a heavy black submarginal line, a large postdiscal costal patch, and a patch in the cell. The right hind wing has a wide marginal black border. Below, the basal half of fore wings is dark purplish brown mixed with black and the distal part of hind wing is darker than the normal.

1 ♂, Coast District, Geelvink Bay, Nov.

Amathusiidæ.

10. *Morphotenaris schoenbergi wandammenensis*, subsp. n.

(Pl. VI. fig. 5.)

Nearest to *kenricki*, B.-Baker, from the Arfak.

♂ ♀. *Fore wing* with cell black as in allied form, this colour also darkening the band to more than halfway between cell and margin, whilst the distal brown part is much darker than it is in *kenricki*; in one ♂ the brown at the tornus is much more obscured with black. Apical ocelli absent or only two small ones present. *Hind wing* below with a variable number of ocelli; the three middle ones may be either absent or partly so.

Some specimens of *kenricki* are transitional to the above

form, having increased black on fore wing and reduced ocelli.

2 ♂♂, 3 ♀♀, 3000–4000 feet, Wandammen Mtns., Nov.

Satyridæ.

11. *Erycinidia maulei*, sp. n. (Pl. VII. fig. 3.)

This species is distinct from any other in the genus, but above it resembles white forms of *Platypthima*.

♂. *Upperside*.—*Fore wing* with a median patch of dull silvery white, extending into the cell below vein 2 and forming a spot between 2 and 3, filling angle of vein 3; rest of cell and costa below vein 3 to base greyish brown; apical half black; a small, square, white costal spot, nearer cell than to apex.

Hind wing dull silvery white, dark greyish at base and inner margin, as also the tail and margin in cellule 2; rest of marginal border black, widest at apex, and between vein 4 and end of tail is traversed by two thin white lines; some greyish scaling at end and base of tail; a small black submarginal ocellus in 2, ringed with white and with a white pupil.

Underside with dark grey ground-colour sparsely scaled with bluish grey. *Fore wing* with white median triangular patch not entering cell; a bar across cell to costa between veins 2 and 3, white near the cell, anteriorly paler than ground-colour; white costal spot as above; a bluish-grey submarginal triangular patch extending from costa to a point on vein 2, and including the costal spot at its proximal edge; in centre of patch a row of four small ocelli in 3–6; a submarginal dark line. *Hind wing* with a dark irregular subbasal line from costa to middle of 1c, crossing cell before vein 7 and at origin of 2; a straight postmedian line from costa to middle of vein 3, then bent shortly inwards and straight to above marginal ocellus, then bent inwards to vein 2; distally of this line a row of four small ocelli in 3–6, and a larger ocellus near margin in 2; apical area grey-brown, with a submarginal narrow band of bluish grey defined by dark grey edges and extending to vein 3; tail black.

Head, thorax, and abdomen smoky black, greyish below. Antennæ dark yellow-brown, lower part of club black on inside.

♀. *Upperside* similar. *Fore wing* with white bar across cell, which is only faintly indicated in ♂; costal spot larger.

Underside much paler than in ♂ and with a brownish ground-colour.

Length of fore wing, ♂ 21, ♀ 22 mm.

A series of both sexes, 6000 feet, Wandammen Mtns., Nov.

12. *Platyphthima euptychioides*, sp. n.

(Pl. VIII. fig. 1.)

Allied to *klossi*, Roths.*

♂. *Upperside* dark smoky brown, darker at the margins, without markings.

Underside paler than above. *Fore wing* with apex and outer margin to vein 3 reddish brown, bordered proximally by a black band which widens posteriorly to vein 2 and touches margin between this vein and 3; proximally of this a pale indistinct postmedian band; inner marginal area smoky grey. *Hind wing* with a postmedian band formed of seven ocelli in 1 c-7, the one in 5 shifted inwards, the one in 6 outwards, and the seventh farther in than the others; each ocellus has a white pupil and black iris ringed with yellow-brown and outwardly with black; the sixth and seventh are only represented by a larger white pupil; the seventh is bordered posteriorly by steel-blue, and the others are similarly bordered proximally and distally, forming a steel-blue band which encloses the ocelli; the inner border of the band is thicker than the outer. A discal band paler than the ground-colour entering the cell at its end and posteriorly joined to the similarly coloured inner margin; outer margin reddish brown, with a thin black terminal line.

Length of fore wing 21 mm.

A series, 6000 feet, Wandammen Mtns., Nov.

13. *Platyphthima pandora*, sp. n.

(Pl. VI. fig. 6.)

Allied to *pedaloidina*, Joicey & Noakes, from the Arfak.

♂. *Upperside* smoky brown. *Fore wing* with a pale median band close to cell and reaching inner margin, narrowed anteriorly to vein 6, outer edge almost parallel with margin. *Hind wing* with pale band showing through from below and outwardly suffused; two anal ocelli in 2 and 3, black ringed with pale brown, the one in 2 the larger; a submarginal violet line, distinct from anal angle to vein 4, and then evanescent.

* *Platyphthima klossi*, Roths. Lep. of B. O. U. & Wollast. Exped. p. 14 (1915).

Underside.—*Fore wing* with paler ground-colour. A pale yellowish median band as above, but more clearly defined and extending nearly to base at inner margin; two ocelli contiguous in 4 and 5 and surrounded by a lead-coloured line; costa and apex above ocelli and distally of the band reddish brown; a strongly waved lead-coloured submarginal line from before the apex to middle of cellule 2; a red-brown marginal line. *Hind wing* pattern similar to *pedaloidina*. A somewhat irregular discal cream-coloured band from costa to first submedian, crossing cell near end; basal half of wing deep chocolate-brown sparsely scaled with grey, but more so at inner margin as far as anal angle; outer half of wing dark reddish brown, this area entering the cell; four outer ocelli, black with pale brown rings and a white pupil, the lower three surrounded by a violet-grey line, the apical one similarly enclosed; a submarginal violet-grey line and a pale brown marginal one; a black submarginal patch between veins 4 and 6 and a black patch at inner angle. Fringes black chequered with greyish yellow between the veins.

♀. Wings more rounded, colour paler, and the two ocelli on hind wing much more distinct.

Length of fore wing, ♂ ♀, 22–24 mm.

A series of both sexes, 6000 feet, Wandammen Mtns., Nov.

14. *Mycalesis fulvianetta semicastanea*, subsp. n.
(Pl. V. fig. 5.)

Differs from *fulvianetta*, Roths.*, in more extended costal and apical black, which nearly touches vein 4 and includes anterior half of cell; a black submarginal border reaching tornus and invaded slightly on veins 2 and 3 by the ground-colour. Hind wing with two dark submarginal lines, inner one thicker.

Underside pinkish brown, costal margin of fore wing darker, discal area on both wings between outer rufous line and ocelli much paler. On fore wing the two middle ocelli smaller than the others, and in the type obsolescent. On hind wing are two additional ocelli, one minute near first submedian and one in cellule 6.

Easily distinguished from the allied *mahadeva*, Bdv., which occurred in the same collection, by the postmedian stripe on fore wing below being *straight*, and *not* inwardly curved.

2 ♂♂, 3000–4000 feet, Wandammen Mtns., Nov.

* *M. fulvianetta*, Roths. Lep. of B. O. U. & Wollast. Exped. in Dutch New Guinea, p. 16 (1915).

15. *Mycalesis barbara pallida*, subsp. n.

♂. Upperside similar to *barbara*, Gr.-Sm., but the bands paler brown. Fore wing with inner edge of band curved inwards below submedian, ocellus in 2 not touching the band and with a pale brownish ring. Hind wing with broader band than in *barbara*, the ocelli ringed with fulvous yellow, the one in 3 being anteriorly obscured by ground-colour.

Underside with white postmedian bands on both wings broader, marginal area whiter.

♀. The bands are white and much broader. Hind wing with a fulvous-yellow anal suffusion. Underside with basal area of both wings dark grey-brown and marginal area darker than in ♂.

Length of fore wing, ♂ 26, ♀ 29 mm.

7 ♂♂, 1 ♀, 3000-4000 feet, Wandammen Mtns., Nov.

NEMEOBIINÆ.

16. *Prætaxila postalba wandammanensis*, subsp. n.

(Pl. V. fig. 6.)

♀. Fore wing more rounded; apical spots a little larger; spot in cellule 3 not connected with bar in 4 and 5; spot in 2 distinctly larger. Hind wing with white band scarcely projecting in cellule 3; in 5 a white subapical spot.

Underside of fore wing with cell-bar broader and better defined than in typical form; band wider posteriorly; on the hind wing the anal spot and one next it shorter.

2 ♀♀, 3000-4000 feet, Wandammen Mtns., Nov.

17. *Dicallaneura virgo*, sp. n.

(Pl. VIII. fig. 2.)

♀. Resembles *leucomelas*, Roths., above, and *exiguus*, Joicey & Noakes, below.

Upperside.—*Fore wing* with smoky-brown basal area extending to vein 2, discal white patch from upper angle of cell to lower submedian, leaving basal two-thirds of inner margin smoky brown, remainder merged in the black outer area. Tornus widely black, thus making the discal patch much smaller than in other species. *Hind wing* as in *leucomelas*, but paler and with reduced costal white.

Underside.—*Fore wing* with discal patch nearer the submarginal line than in *exiguus*, and not traversed by any line. *Hind wing* with reduced costal white and subapical brown bars in cellules 4 and 5 enlarged.

Length of fore wing 20 mm.

7 ♀♀, 3000-4000 feet; 1 ♀, Coast District, Geelvink Bay, Nov.

18. *Dicallaneura albosignata*, sp. n.

(Pl. VIII. fig. 3.)

♀. Resembles *virgo*, but is distinctly different below. *Upperside* of fore wing similar to *virgo*, discal patch more extended towards outer angle, its lower edge rounded a little below vein 2 and just touching 1*b*. Hind wing with three submarginal black spots and one on the tail.

Underside of fore wing similar to *virgo*; extended basal median area, two curved grey marks in the cell, the outer one bordering the brown spot; a subterminal line more faintly marked than in *virgo*, and proximally of it a series of six white spots, the first three in 8-6 larger than the lower three in 5-3, the spot in 5 placed more proximal than the rest, two white apical spots. *Hind wing* with two grey stripes in the cell, a grey stripe outside it between 4 and 7 and continued along costa to base; a grey postcellular band from inner margin to vein 4, narrowly separated from a grey submarginal band about half its width and reaching vein 4; a stripe beyond cell from costa to 4, anteriorly white and merging into grey below vein 6; three white apical spots in 4-6; three black submarginal spots in 3-5, the upper one with a white dot in centre, lower ones edged distally with white on inside; a second submarginal grey band half width of first and close to it, continued beyond 5 as a thin line; a black square tail-spot edged with white distally; two black submarginal bars in 1*b* and 1*c* similar to the one in 3.

Length of fore wing 23 mm.

1 ♀ only, 3000-4000 feet, Wandammen Mtns., Nov.

19. *Dicallaneura amabilis mimica*, subsp. n.

(Pl. VIII. fig. 4.)

Resembles the ♀ of *decorata*, Hew., above, but is allied to *angustifascia*, Joicey & Noakes. Paler yellow-brown, more extended on fore wing; slightly darker at base.

Upperside.—Fore wing with yellow-brown extended to end of lower submedian, very slightly indented in 1*b* and 1*c*, and not at all in cellule 3. Hind wing with costa and apical part paler than rest of wing.

Underside paler than in *angustifascia* ♀. Fore wing with transverse band joined to submarginal streak, and lines traversing it much thinner. Inner margin yellowish except

at extreme base. Hind-wing markings as in *angustijascia*. Two white dots in cellules 4 and 5 near margin; front discal bars in cellules 2 and 3 triangularly shaped, being prolonged basad.

1 ♀, Coast District, Geelvink Bay, Nov. 1914.

Lycænidæ.

20. *Cyaniris pullus*, sp. n.
(Pl. VII. fig. 4.)

Allied to *acesina*, B.-Baker.

♂. *Upperside*.—Fore wing dark blue, with a broad black outer margin which is scarcely narrower at the tornus. Hind wing brownish black, paler costally, and thinly scaled with blue on the disc.

Underside smoky grey, with spots of same colour outlined with white. *Fore wing* paler in median area; a spot across end of cell; a narrow postmedian band formed of seven spots joined together, the first on the costa indistinct, second to fifth in a line to vein 3, sixth in 2 parallel to margin, seventh below sixth, a spot placed proximally of the second; a marginal row of four indistinct round spots. *Hind wing* with a subbasal line of three spots; a spot across end of cell; two rounded spots, one below the other, beyond middle of costa, larger than any of the others; a spot on inner margin; a postmedian series of five spots in 1c-5, those in 2 and 3 more proximal than the others; a marginal row of indistinct small rounded spots. Fringes white, dark at veins and on fore wing anteriorly.

Length of fore wing 13 mm.

5 ♂♂, 3000-4000 feet, Wandammen Mtns., Nov.

21. *Nacaduba proxima*, Roths.

Nacaduba proxima, Rothschild, Lep. of B. O. U. & Wollast. Exped. in Dutch New Guinea, p. 29. no. 134 (1915), ♂.

♀. The costal and terminal areas on both wings are much broader; in other respects it resembles the ♂.

Length of fore wing 13 mm.

♂ ♀, Wandammen Mtns., 3000-4000 feet, Nov.

22. *Lampides wandammenensis*, sp. n.
(Pl. VIII. fig. 6.)

Allied to *pactolus*, Feld., from Amboina.

♂. *Upperside* glistening pale sky-blue, hind wing whitish at costa.

Underside with dark grey ground-colour. *Fore wing* with inner edge of median band nearly straight, outer edge curved outwardly to vein 2, then forming a straight bar below this vein. A postdiscal band of four spots, the first near costa indistinct, the second in cellule 6 shifted inwards, the third placed more distal, the fourth below it and in line with its inner edge, a bar crossing cellule 3. Submarginal band regular and of even breadth, the inner edge thicker than the outer, an antimarginal white line. *Hind wing* with a narrow, subbasal, nearly straight band, which is parallel to central part of median band; costal spot of median band larger and not connected with band. Postdiscal band of four spots, the two lower placed distally of first two, a short bar near base of cellule 2. Submarginal line of short curved bars; a marginal row of four rounded spots. Anal spot in 2 edged inwardly with orange-yellow, and two small spots of this colour at anal angle.

Length of fore wing 21 mm.

4 ♂♂, Wandammen Mtns., 3000-4000 feet, November.

23. *Lampides nitens*, sp. n.

(Pl. VIII. fig. 5.)

Closely allied to *malaguna*, Ribbe, from the Bismarck Islands.

♂. *Upperside* brilliant sky-blue. *Underside* similar to *amphissa*, Feld. Ground-colour dark grey. *Hind wing* with the two anal spots edged proximally with orange-yellow.

Length of fore wing 20 mm.

1 ♂, Wandammen Mtns., 3000-4000 feet, Nov.

24. *Callictita cyara albiplaga*, subsp. n.

(Pl. VII. fig. 5.)

♂. Distinguished from *cyara*, B.-Baker*, in the smaller patch on hind wing above and the differently shaped basal brown below.

Upperside of hind wing with more extended blackish and smaller creamy discal patch which extends anteriorly to vein 6 and posteriorly to 2, its inner edge not reaching the bases of 2 and 7, and outer edge nearest the margin in 4 and 5.

Underside of fore wing with increased black-brown colour, the narrow stripes being creamy white. *Hind wing* with creamy ground-colour which invades the basal brown from

* *Callictita cyara*, B.-Baker, P. Z. S. 1908, p. 119, pl. viii. fig. 1.

the costa; basal stripe angled outwards at vein 5, which it nearly touches at cell-end; submarginal row of brown spots; an anal marginal spot in 1c, not developed in *cyara*.

Length of fore wing 14 mm.

7 ♂♂ obtained, 3000-4000 feet, Wandammen Mtns., Nov.

25. *Pareololima mima*, sp. n.

(Pl. VII. fig. 6.)

Allied to *aroa*, B.-Baker, but differs in the differently shaped apical area, the reduced basal black, and heavier costal black on fore wing. The bluish sheen at base of wings is also absent. One specimen is chalky white.

♂. *Upperside* of fore wing with apical black to below origin of vein 6, two-thirds along vein 4, nearly halfway along vein 3, and along a third of 2; costal black extending along the length of upper part of cell. Hind wing with a little black at base.

♀. Fore wing with slightly reduced apical and basal black. Hind wing with reduced basal black.

Length of fore wing, ♂ ♀, 15 mm.

6 ♂♂, 1 ♀, 3000-4000 feet, Wandammen Mtns., Nov.

26. *Candalides pruina*, Druce, ♀.

Candalides pruina, H. H. Druce. Ann. & Mag. Nat. Hist. ser. 7, vol. xiii. p. 140, ♂ (1904) (Upper Aroa River).

♀. Wings more rounded, ground-colour a little paler. Fore wing with a narrow whitish median stripe, tinged with pale blue and extending from base along lower edge of cell to halfway between cell and margin, being much broader beyond the cell.

Underside without any dark apical or costal suffusion on fore wing.

Length of fore wing 17 mm.

One specimen, also 4 ♂♂, 3000-4000 feet, Wandammen Mtns., Nov.

27. *Candalides ignobilis*, sp. n.

Similar to *innotatus*, Misk., and *marginata*, Gr.-Sm., but darker blue and wings more rounded than the former, and with narrower margins than the latter.

Fore wing with costa narrowly black, outer margin below vein 4 broader than in *innotatus*.

Length of fore wing 14 mm.

1 ♂, Wandammen Mtns., 3000-4000 feet, Nov.

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28. *Thysonotis mamberano*, sp. n.

Nearest *helga*, Gr.-Sm., from Jobi.

♂. *Upperside* with narrower margins on both wings. Fore wing with an indistinct white band from inner margin to vein 4. Hind wing with white band narrower, leaving more basal blue than in *helga*.

Underside of fore wing with broader costal blue beyond cell, and between veins 2 and 3 the blue line almost touches the white band. Hind wing with white band as above.

Length of fore wing 20 mm.

1 ♂, River Mamberano, N. Dutch New Guinea, Dec. 1913.

29. *Thysonotis melane*, sp. n.

(Pl. VII. fig. 7.)

♂. *Upperside* black, hind wing paler at costal margin.

Underside with black ground-colour. Fore wing with white median band from inner margin to vein 5, narrowing anteriorly and incurved on outer edge; basal two-thirds of costa blue. Hind wing with white discal band narrowing sharply to inner margin, a basal blue line, a marginal row of black spots edged with blue and separated by the veins.

Head, thorax, and abdomen black, paler below; antennæ black.

Length of fore wing 15 mm.

A small series, 3000-4000 feet, Wandammen Mtns., Nov.

30. *Waigeum bakeri*, sp. n.

(Pl. VII. fig. 8.)

Not nearly allied to any known form.

♀. *Upperside*.—Fore wing black, with a broad, somewhat ovate, white median patch, extending from base and entering cell along its lower edge, covering basal half of vein 2, more still of vein 3, and nearly reaching 4, where it is about 3 mm. from margin; a short basal stripe of metallic greenish blue in the cell and a short basal stripe of very pale metallic blue on inner margin reaching to edge of median patch. Hind wing black; costa white to vein 7; a little greenish-blue scaling at the base. Fringes white between the veins.

Underside with black ground-colour. Fore wing with a broad white median patch tinged slightly with yellow, broader than above, reaching the submarginal spots between veins 2 and 4, and extended as a line to apex and round to the subapical bar; costa metallic greenish blue traversed by

the dark veins; a short greenish-blue subapical bar; a submarginal row of greenish-blue lunules, their concavities filled in with black. *Hind wing* with a basal cream-coloured stripe including the costa to apex and crossing cell at its middle, this stripe invaded by a black basal bar not reaching costa; a large and almost D-shaped greenish-blue area occupying distal half of wing, its outer edge cream-coloured, with metallic scaling on inside; a submarginal greenish-blue line from base to apex.

Head, antennæ, thorax, and abdomen black; thorax with some metallic greenish scaling above.

Length of fore wing 19 mm.

3 ♀ ♀, 3000-4000 feet, Wandammen Mtns., Nov.

31. *Deudorix littoralis*, sp. n.

Near *woodfordi*, Druce, from Solomons. At once distinguished by the reduced brown on fore wing, which reaches very little above vein 2 and hardly touches the submedian. *Hind wing* with brown reduced to an oblique bar from lower end of cell to near margin between veins 2 and 3; spot on anal lobe yellowish.

Underside darker and more brownish than in *woodfordi*. Fore wing with postdiscal band straighter. *Hind wing* with spots well defined by grey; anal spot ringed with yellowish, anal green scaling much reduced.

♀. More resembles the ♀ of *epijarbas*, Moore. Similar above, but on the underside the bands are narrower and better defined. Anal spot in 2 ringed with pale yellow, and between this and inner margin is a metallic yellowish-green line.

Length of fore wing, ♂ 22, ♀ 21 mm.

Types from Kapaur, ex Coll. Grose-Smith; also 1 ♂, Coast District, Geelvink Bay; 3 ♂ ♂, German New Guinea.

The co-types have more extended brown on the hind wing.

HETEROCERA.

Arctiadæ.

32. *Asura wandammenensæ*, sp. n.

Allied to *phryctopa*, Meyr.

♂. Upperside of *fore wing* with dark grey ground-colour, veins darker. A rounded yellow basal spot edged with red and with a red spot at its outer edge; three subbasal red spots—one at costa, one below vein 2, and one at inner margin—another distally of the latter, a dot above it near second

subbasal spot; at end of cell a large spot, red anteriorly and yellow posteriorly, where it is outwardly rounded, and extending beyond cell, its inner edge slightly convex from costa to vein 3, its outer edge incurved to vein 6; a narrow postdiscal band of small red spots divided by the veins, curved inward at costa, then outwardly between veins 7 and 3, thence inwardly to inner margin below the cell-spot; a red terminal border marked with yellow, widest at apex and in cellules 4 and 5; costa narrowly red from apical spot to postdiscal band. *Hind wing* pale yellowish tinged with red, more especially on costa and upper distal portion.

Underside of fore wing red tinged with ochreous, of hind wing as above, costa red.

Head and thorax dark grey marked with red, frons and base of head red, thorax with a red mesial line, abdomen pale yellowish tinged with red. Legs and underside of thorax and abdomen red.

Length of fore wing 17 mm.

2 ♂♂, Wandammen Mtns., 3000-4000 feet, Nov.

33. *Diacrisia nigricorna*, sp. n.

This strongly resembles *biagi f. angiana*, Joicey & Talbot, and also *elongata*, Roths. It is most nearly allied to the latter in shape of wing, but *elongata* has not the black thoracic patch. No other forms of this group have black antennæ.

♂. Ground-colour pale ochreous, fore wing with a greyish tinge. Upperside of *fore wing* with a small black subbasal spot above submedian; a dot below cell at vein 2; at end of cell two black wedge-shaped spots nearly touching one another; two black dots on discocellulars; two postdiscal bands of spots, the first of eight spots from cellule 5 to inner margin, spots 2-4 only separated by the veins, 5 and 6 separated by vein 2, 7 and 8 by the submedian, spots 1 and 6 smaller than the others; second band of eleven spots from cellule 7 to inner margin in four groups; a subterminal band of six spots on veins 3-8. *Hind wing* with a large quadrate spot closing the cell; submarginal spots in 1 b, 1 c, 2, 4, and 5. Underside ochreous yellow, markings as above.

Palpi, frons, and antennæ black; vertex, tegulæ, and patagia brownish ochreous; central part of thorax black; abdomen pale orange above with a black dorsal line below brownish ochreous with a black lateral stripe; pectus and legs black, fore coxæ fringed with orange hair, hind tibiæ fringed with orange and grey hair on inside.

Length of fore wing 23 mm,

1 ♂, Wandammen Mtns., 3000-4000 feet, Nov.

Noctuidæ.

ERASTRIANÆ.

34. *Smicroloba costifasciæ*, sp. n.

Near *quadrapeæ*, Hampson.

Upperside with reddish-brown ground-colour, basal half paler, washed with purplish. *Fore wing* with a thick dark brown postdiscal stripe, straight and obliquely placed from apex to inner margin; this is accompanied by an irregularly dentate outer line joining it below the apex, the space between the two being tinged with purple; two brown costal lines, the inner beyond middle of costa, forming a greyish band which curves upwards to join the postdiscal line just below apex; a faint irregular subbasal line, a black dot in cell, a faint subterminal dentate line. *Hind wing* with costa broadly pale ochreous, inner margin narrowly so. A short brown median stripe, followed by a faint postdiscal dentate line, which is emphasized by dots on the veins; a faint dentate subterminal line.

Underside reddish brown speckled with black, postdiscal lines marked. *Fore wing* with costa and inner margin pale ochreous; *hind wing* with basal area pale ochreous.

Head and tegulæ pale ochreous; thorax and base of abdomen pale reddish brown; rest of abdomen above black mixed with ochreous, below ochreous, and black at sides; pectus grey-white, legs ochreous speckled with black, tarsi black fringed with white at apices of segments.

Length of fore wing 12 mm.

1 ♂, Wandammen Mtns., 3000-4000 feet, Nov.

Hypsidæ.

35. *Deilemera dinawa*, B.-Baker, ab. *nigripuncta*, ab. n.

The hind wing bears on the reduced white area a triangle-shaped spot of ground-colour at base of cellule 2. The band of fore wing is reduced and somewhat broken, leaving a rounded spot at end of cell.

Three other specimens of the species from the same locality vary in width of band on fore wing. In one of these the band is very broad and has a projection from the discocellular into the cell nearly to vein 2.

1 ♀, Angi Lakes, Arfak Mtns., 6000 feet, Jan.-Feb.

Eupterotidæ.

36. *Eupterote punctata*, sp. n.

Allied to *styx*, B.-Baker, from British New Guinea.

♂. Upperside with fawn-brown ground-colour. *Fore wing* much irrorated with black. A black basal line; a black median band followed by four black discal lines which are waved and become thinner posteriorly; basal line straight and outwardly oblique, other lines inwardly oblique and anteriorly curved inwards to costa; a waved, well-defined, pale outer discal line, followed by a strongly dentate black subterminal line, the space between being much irrorated with black scaling. At end of cell a round ochreous spot. *Hind wing* with two dark basal lines, two slightly waved discal lines, the outer the broader, followed by a black dentate subterminal line, the space between being thinly irrorated with black scaling.

Underside paler than above. On *fore wing* the outer discal line is most strongly indicated. The *hind wing* is darker and five waved lines are clearly marked, followed by the straighter and darker outer line.

Head and thorax deep velvety brown. At base of antennæ on each side of frons is an ochreous tuft. Antennæ, legs, thorax below, and abdomen fawn-brown.

Length of fore wing 48 mm.

6 ♂♂, Wandammen Mtns., 3000-4000 feet, Nov.

Geometridæ.

37. *Milionia wandammenense*, sp. n.

(Pl. VIII. fig. 7.)

Allied to *aroensis*, Roths.

♂ ♀. *Upperside* with only a faint bluish gloss over the wings. *Fore wing* with a wider red band than in *aroensis*, being widened proximally; basal blue reduced, deep in colour, and faintly metallic. *Hind wing* with blue reduced to area of cell and below it, a metallic streak along lower edge of cell and along submedian.

Underside of fore wing with reduced metallic blue at base. *Hind wing* as in *aroensis*, bearing also the subapical patch of short black hair as in that species, this being absent in the ♀.

Head and thorax deep blue, frons, sides of head, and tegulæ metallic greenish blue; abdomen black with a deep greenish-blue gloss.

Length of fore wing, ♂ 24, ♀ 22 mm.

A single pair, 6000 feet, Wandammen Mtns., Nov.

38. *Milonia witleyensis*, sp. n.
(Pl. VIII. fig. 8.)

Allied to *diva*, Roths.

♂. *Upperside*.—Fore wing with an abbreviated transverse red band which does not quite reach upper edge of cell and crosses it proximally of veins 2 and 3, part within the cell narrowest, outer edge evenly curved, inner edge curved outwards in lower median space. Hind wing with a streak of dark metallic blue along lower edge of cell and one along submedian, as in *diva*. Both wings with a deep blue gloss.

Underside of fore wing with the red band reduced to a rounded spot reaching vein 2, and a minute spot in cell above origin of 2; a metallic greenish-blue patch from subcostal to just below vein 2, filling outer end of cell, the base of 3, and inner half of 2; metallic greenish-blue streaks at base, one on costa, two within cell. Hind wing with metallic greenish-blue basal costal streak, and one along lower edge of cell. Hind wing and apical area of fore wing suffused with deep blue.

Length of fore wing 20 mm.

One example, 6000 feet, Wandammen Mtns., Nov.

39. *Eubordeta mars*, sp. n.
(Pl. VIII. fig. 9, ♂.)

Allied to *acerita*, Jord., and to *rubroplagata*, B.-Baker.

♂ ♀. *Upperside*.—Fore wing with a red transverse band which is narrower than in either of the allied forms, being reduced proximally. Hind wing with a small yellow or reddish costal stripe placed near the apex and varying in size. Both wings black with a deep blue gloss, which is more intense over basal area of hind wing.

Underside of fore wing as in *rubroplagata*, but with a narrow stripe. Hind wing as in *accrita*, but with a narrower yellow band, which is typically not entire, but broken on the costa, its anterior end more widely separated from the basal streak than in *rubroplagata*. Both wings with a deep blue gloss which is more intense over basal area of hind wing.

Two ♀ ♀ have the band on the hind wing entire as in *accrita*, and in one ♂ and three ♀ ♀ the band is much less widely interrupted than is typically the case.

Length of fore wing, ♂ ♀, 17–21 mm.

♂ ♂, 8 ♀ ♀, 3000–4000 feet, Wandammen Mtns., Nov.

40. *Eubordeta flammens discus*, subsp. n.
(Pl. VIII. fig. 10.)

♀. *Upperside*.—Fore wing as in *flammens*, B.-Baker. Hind wing with a narrower black margin, the red band nearest the margin from vein 4 to anal angle; basal black extended, invading cell to a greater extent than in *flammens*.

Underside of fore wing as in the typical form. Hind wing with a large black discal patch almost joined to a basal spot; in one specimen it is merged into the basal black so as to fill nearly all the cell.

Some specimens of *flammens* from the Arfak Mtns. possess a small discal spot.

4 ♀ ♀, 3000–4000 feet, Wandammen Mtns., Nov.

Saturniadae.

41. *Coscinocera hercules heraclides*, subsp. n.

♂. *Upperside* with basal band of fore wing more oblique in its lower part and crossing vein 2 midway between the cell and postdiscal band; its upper lunate portion is only 3.5 mm. from the black outer border of the eye-spot. The eye-spot on fore wing is about twice the size of the one on the hind wing; on the underside they are only faintly edged with yellow-brown.

A specimen from the Angi Lakes is transitional to *eurys-theus*, Roths., in having the basal line on the fore wing shifted nearer the cell and its upper part farther from the eye-spot. The eye-spots below are thinly edged with yellow-brown proximally.

1 ♂ (type), Wandammen Mtns., 6000 feet, Nov.; 1 ♂, Angi Lakes, Arfak, 6000 feet, Jan.–Feb.; 1 ♂ in Tring Museum from Arfak.

Uraniidae.

42. *Urapteroides semiobsoleta reducta*, subsp. n.

♂ ♀. The fore wing has a narrower margin, but it is broader along basal part of costa than in the typical form from British New Guinea.

5 ♂ ♂, 2 ♀ ♀, Wandammen Mtns., 3000–4000 feet, Nov.

Cossidae.

43. *Zeuzera caudata*, sp. n.

Allied to *postexcisa*, Hampson.

♂. Fore wing with all spots obsolescent except costal and

marginal ones. Spots in cell rounded, those outside it more ovate, and all more or less joined transversely. Marginal spots prominent and a larger one at apex.

Hind wing with spots obsolescent; one in lower part of cell and some minute ones in cellules 1c-3; anal lobe edged with black and a small spot at end of veins 2 and 3.

Length of fore wing 25 mm.

1 ♂, Wandammen Mtns., 3000-4000 feet, Nov.

44. *Zeuzera reticulata*, sp. n.

Allied to *coffea*, Nietn.

♂. The obsolescent spots on fore wing are all larger and more or less joined transversely. Hind wing with many small obsolescent spots, all separate, and small defined marginal spots at ends of veins 1b-7.

Length of fore wing 21 mm.

1 ♂, Wandammen Mtns., 3000-4000 feet, Nov.

EXPLANATION OF THE PLATES.

PLATE V.

- Fig. 1. *Papilio (Troides) chimæra dracæna*, ♀.
 Fig. 2. *Delias caroli wandammenensæ*, ♂.
 Fig. 3. — *thompsoni*, ♂.
 Fig. 4. — —, ♀.
 Fig. 5. *Mycalesis fulvianetta semicastanea*, ♂.
 Fig. 6. *Prætaevila postalba wandammenensis*, ♀.

PLATE VI.

- Fig. 1. *Delias mariæ*, ♂.
 Fig. 2. — —, ♀.
 Fig. 3. — *tessei*, ♂.
 Fig. 4. — —, ♀.
 Fig. 5. *Morphotænaris schoenbergi wandammenensis*, ♂.
 Fig. 6. *Platypthima pandora*, ♂.

PLATE VII.

- Fig. 1. *Cynthia arsinöe rebeli*, Fruh., aberration.
 Fig. 2. — — —. Underside.
 Fig. 3. *Erycinidia maudei*, ♂.
 Fig. 4. *Cyaniris pulvis*, ♂.
 Fig. 5. *Callitita cyara albipilaga*, ♂.
 Fig. 6. *Parelodina nima*, ♂.
 Fig. 7. *Thysonotis melane*, ♂.
 Fig. 8. *Waigeun bakeri*, ♀.

PLATE VIII.

- Fig. 1. *Platythima euptychioides*, ♂.
 Fig. 2. *Dicallaneura virgo*, ♀.
 Fig. 3. — *albosignata*, ♀.
 Fig. 4. — *amabilis mimica*, ♀.
 Fig. 5. *Lampides nitens*, ♂.
 Fig. 6. — *wandammenensis*, ♂.
 Fig. 7. *Milionia wandammenensa*, ♂.
 Fig. 8. — *witleyensis*, ♂.
 Fig. 9. *Eubordeta mars*, ♂.
 Fig. 10. — *flammens discus*, ♀.

III.—*New Species of Lice.* By BRUCE F. CUMMINGS,
 British Museum (Natural History).

(Published by permission of the Trustees of the British Museum.)

ANOPLURA.

AMONG the dry material, mounted on cardboard in the collection of the British Museum, two specimens were discovered labelled simply "*Pedetes capensis*." These, on being washed in caustic potash and mounted on a slide in Canada balsam, proved to be two females of an interesting and hitherto undescribed form.

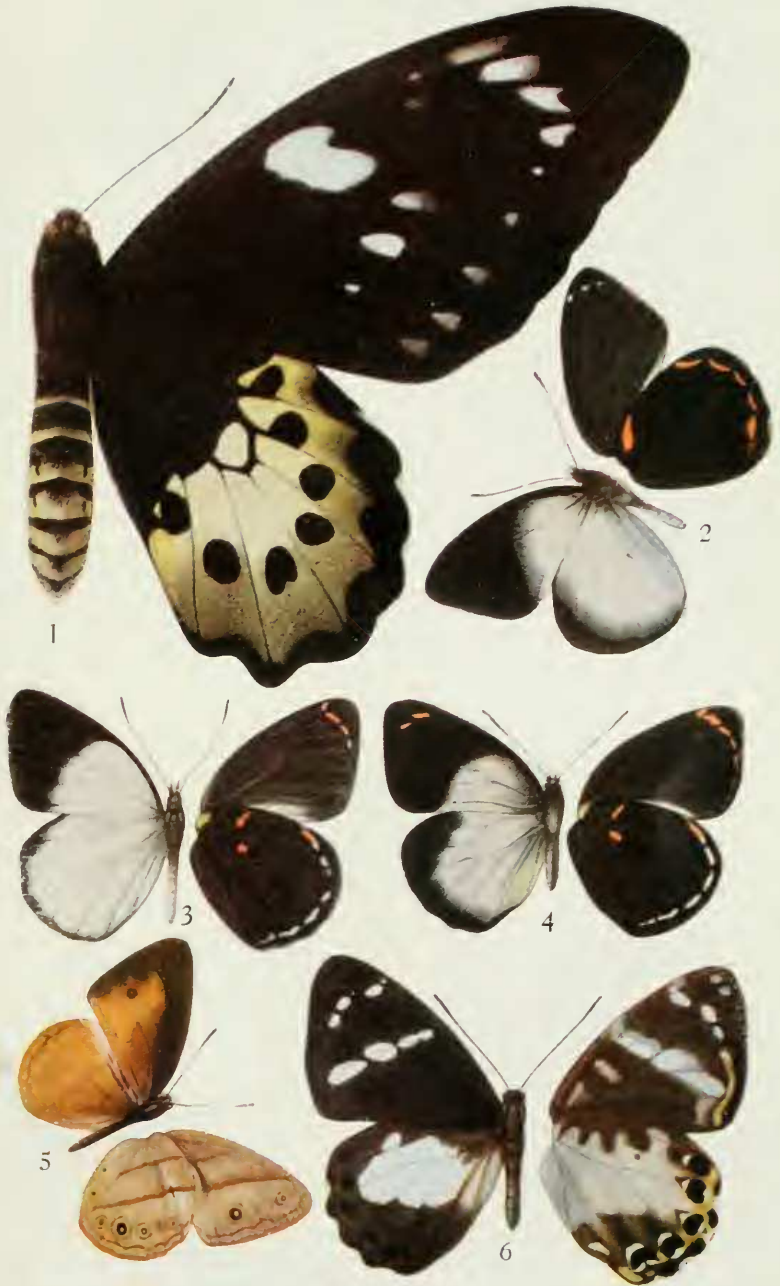
EULINOGNATHUS, gen. nov.

Head longer than broad, antennæ arising just in front of halfway, broader behind the antennæ than in front. No projecting postero-lateral angles. Behind, the head is sunk deep into the thorax. Around the mouth in front a circlet of triangular denticles. Abdomen without tergites or sternites. Five pairs of pleurites, the anterior pair well developed. First pair of legs small. Hairs on the abdomen modified, being long, flattened, parallel-sided, truncate at the tip.

On *Pedetes capensis*, now known as *Pedetes coffer*, Pall. (family Pedetidæ).

Eulinognathus denticulatus, sp. n.

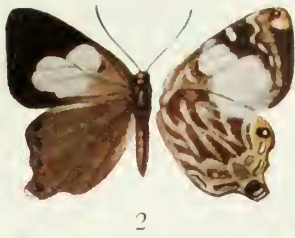
External Form. Female.—Head: the outline is well shown in the figure (text-fig. 1). The characteristic features of the head are the circlet of denticles around the mouth, the absence of postero-lateral angles and also of any "neck" or narrowing of the head just before entering the thorax, so that



NEW LEPIDOPTERA FROM DUTCH NEW GUINEA.



NEW LEPIDOPTERA FROM DUTCH NEW GUINEA.



2



3



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7



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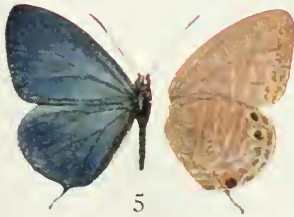
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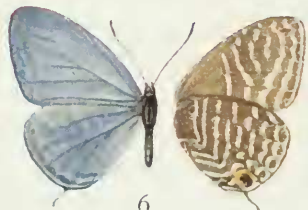
1



10



5



6